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SUPERFUND DIVISION

Ambient Air Monitoring Report

**National Industries, Inc. Reclamation Area Site
Park Hills, Missouri**

*Prepared for
The Doe Run Company*

November 2012



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Jefferson City, MO 65109
Phone: (573) 638-5000
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Superfund

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February 18, 2013

Mr. Mark Nations
The Doe Run Company
P.O. Box 1633
Desloge, Missouri 63601

Re: Ambient Air Monitoring Report – National Site

Dear Mr. Nations:

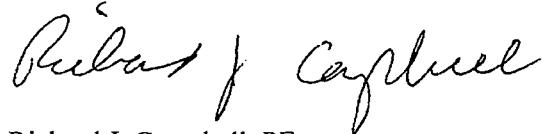
Please find attached the November 2012 “*Ambient Air Monitoring Report*” for The Doe Run Company at the National Industries, Inc. Reclamation Area Sites, located near Park Hills, Missouri.

This report will include the following:

- **Glossary of Terms** – Listing of the abbreviations used for each parameter and unit.
- **Ambient Air Quality Standards** – Lists the maximum allowable concentrations for the measured parameters.
- **TSP, Lead & PM₁₀ Particulate Summaries** – Includes the averages of each monitored parameter, which relates to the federal standards.
- **Particulate and Lead Analysis Spreadsheets**.
- **Lab Results (lead & cadmium)** – Lab reports from Inovatia Laboratories, LLC.
- **Meteorological Data Printouts** – This supplies printouts of each parameter.

Barr Engineering Company offers this report as an independent laboratory. This includes the weighing of filters, obtaining lead and cadmium analysis, compiling the data, and preparing the report. No interpretation of the data or analysis of the results is implied or intended. Should you have any questions regarding this report, please call.

Respectfully,



Richard J. Campbell, PE
Chemical Engineer
Senior Environmental Consultant

c: Kathy Rangen
Jason Gunter
Ty Morris
Kevin Lombardozzi

GLOSSARY OF TERMS

$\mu\text{g}/\text{m}^3$	Micrograms per Cubic Meter
mph	Miles per Hour
Wind Direction	Degrees from True North
TSP	Total Suspended Particulate
PM ₁₀	Particulate Matter - 10 Microns or Less
mmHg	Millimeters of Mercury

NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

PM ₁₀ – Particulate Matter	24-Hour*	Annual Maximum	150 $\mu\text{g}/\text{m}^3$
Lead	Calendar Quarter	Arithmetic Mean	1.5 $\mu\text{g}/\text{m}^3$
Lead	Rolling 3-Month Average	Arithmetic Mean	0.15 $\mu\text{g}/\text{m}^3$

TSP (Total Suspended Particulate) – There are no Federal Standards that apply solely for TSP.

*This standard must be exceeded more than once a year to constitute a violation.



TSP and Lead Concentration Summary

National
Park Hills, Missouri

2012

Date	TSP Big River #4 (µg/m ³)	TSP Ozark #1 (µg/m ³)	TSP Soccer #2 (µg/m ³)	TSP Water Plant #3 (µg/m ³)	LEAD Big River #4 (µg/m ³)	LEAD Ozark #1 (µg/m ³)	LEAD Soccer #2 (µg/m ³)	LEAD Water Plant #3 (µg/m ³)
11/1/12	54	42	43	37	0.044	0.023	0.026	0.036
11/2/12	INVALID	36	32	31	INVALID	0.008	0.010	0.006
11/5/12	24	16	15	15	0.000	0.011	0.013	0.000
11/6/12	8	11	9	9	0.013	0.014	0.012	0.021
11/7/12	19	18	15	9	0.021	0.018	0.017	0.008
11/8/12	16	35	26	16	0.000	0.027	0.024	0.000
11/9/12	19	48	58	21	0.000	0.070	0.078	0.000
11/12/12	11	18	16	11	0.007	0.009	0.014	0.011
11/13/12	55	19	26	14	0.018	0.009	0.025	0.009
11/14/12	27	20	23	12	0.021	0.009	0.020	0.000
11/15/12	35	26	29	18	0.029	0.016	0.024	0.018
11/16/12	31	31	42	30	0.015	0.013	0.023	0.011
11/19/12	22	28	57	19	0.022	0.019	0.055	0.028
11/20/12	88	56	49	37	0.138	0.018	0.033	0.046
11/26/12	41	30	32	27	0.021	0.009	0.008	0.008
11/27/12	43	44	46	23	0.060	0.035	0.054	0.018
11/28/12	47	38	38	24	0.044	0.029	0.051	0.017
11/29/12	19	26	32	15	0.010	0.025	0.039	0.000
11/30/12	23	34	52	24	0.000	0.016	0.040	0.006
Monthly Average	32	30	34	21	0.026	0.020	0.030	0.013
Oct 2012					0.013	0.009	0.018	0.013
Sept 2012					0.023	0.008	0.023	0.012
Rolling 3-month Average					0.02	0.01	0.02	0.01
					3-month Average Lead NAAQS µg/m ³			
								0.15

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.



Particulate Summary

National
Park Hills, Missouri

2012

Date	PM ₁₀ Big River #4 (µg/m ³)	PM ₁₀ Ozark #1 (µg/m ³)	PM ₁₀ Soccer #2 (µg/m ³)	PM ₁₀ Water Plant #3 (µg/m ³)	PM ₁₀ NAAQS (µg/m ³)
2-Nov	28	18	17	18	150
5-Nov	10	10	11	11	150
8-Nov	11	14	12	10	150
11-Nov	6	12	21	7	150
14-Nov	21	11	13	8	150
17-Nov	19	20	29	20	150
20-Nov	23	25	27	22	150
26-Nov	25	22	23	18	150
29-Nov	12	12	12	9	150
Monthly Average	17	16	18	14	

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.

Particulate and Lead Analysis



TSP and Lead Analysis

The Doe Run Company



TSP and Lead Analysis

The Doe Run Company

NOTES

11/21/2012 - 11/23/2012 - Holidays - No samples scheduled

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celsius

P_{av} = average station pressure in millimeters of mercury

$$P_f = (((\text{Temp In } ^\circ\text{Kelvin} * \text{Temp Slope}) + \text{Temp Int.})) * 1.868$$

$$P_1 = ((\text{Temp in } ^\circ\text{Kelvin} * 0.0664) + (-0.4213)) * 1.8$$

$P_a/P_s = \text{pressure ratio of } P_i \text{ and } P_{av} = 1 - Pf/P_{av}$

Q_s = look up table volumetric flow rate

Q_{std} = total sample volumetric flow rate corrected to standard conditions

V_{std} = total sample volume corrected to standard conditions

TSP = mass concentration in $\mu\text{g}/\text{std m}^3$

Lead = mass concentration in $\mu\text{g}/\text{std m}^3$



TSP and Lead Analysis

The Doe Run Company

NAT TSP Lead 1112 - Soccer #2



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P4475

National Site Water Plant #3

Sample Date	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. mg	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations	
		2012										TSP µg/m ³	Lead µg/m ³
11/1/2012	8612310	0.0665	64	9	743.7	34.2	0.954	1.205	1.247	23.71	1774	37	0.036
11/2/2012	8612302	0.0545	11	9	744.9	34.2	0.954	1.205	1.249	23.72	1777	31	0.006
11/5/2012	8614892	0.0267	< 10	5	746.8	33.7	0.955	1.200	1.262	23.65	1790	15	0.000
11/6/2012	8614882	0.0159	38	6	744.9	33.8	0.955	1.201	1.257	23.73	1789	9	0.021
11/7/2012	8614873	0.0154	11	6	746.6	33.8	0.955	1.201	1.260	23.60	1785	9	0.006
11/8/2012	8614863	0.0290	< 10	6	748.6	33.9	0.955	1.202	1.262	23.49	1779	16	0.000
11/9/2012	8614854	0.0367	< 10	16	745.2	35.1	0.953	1.218	1.230	23.59	1742	21	0.000
11/12/2012	8614848	0.0206	19	2	752.8	33.4	0.956	1.195	1.281	23.59	1813	11	0.011
11/13/2012	8614835	0.0256	16	2	756.4	33.3	0.956	1.195	1.288	23.70	1831	14	0.009
11/14/2012	8614826	0.0217	< 10	2	755.1	33.3	0.956	1.195	1.286	23.64	1824	12	0.000
11/15/2012	8614816	0.0329	33	3	753.7	33.4	0.956	1.196	1.281	23.72	1823	18	0.018
11/16/2012	8614807	0.0538	20	5	755.2	33.6	0.955	1.199	1.279	23.73	1820	30	0.011
11/19/2012	8639697	0.0337	50	9	750.3	34.2	0.954	1.207	1.257	23.70	1788	19	0.028
11/20/2012	8639688	0.0655	81	10	747.8	34.3	0.954	1.207	1.252	23.78	1786	37	0.046
11/26/2012	8639679	0.0489	14	3	749.0	33.4	0.955	1.196	1.272	23.74	1812	27	0.008
11/27/2012	8639669	0.0428	33	-1	754.0	32.9	0.956	1.189	1.293	23.66	1836	23	0.018
11/28/2012	8639659	0.0442	30	1	754.0	33.2	0.956	1.193	1.286	23.64	1824	24	0.017
11/29/2012	8639649	0.0275	< 10	7	749.9	34.0	0.955	1.203	1.262	23.73	1797	15	0.000
11/30/2012	8639641	0.0420	11	13	747.7	34.6	0.954	1.212	1.244	23.84	1779	24	0.006

Data Captured	TSP	Lead
Valid Samples:	19	19
Scheduled Samples:	19	19
Percent Data Captured:	100%	100%

Monthly Average:	21	0.013
Standard Deviation:	9	0.013
Maximum:	37	0.046
Minimum:	9	0.000

NOTES

11/21/2012 - 11/23/2012 - Holidays - No samples scheduled

Filter Blank Nominal Airflow Tolerance ≤5 µg/m³

11/27/2012	8639665	-0.0002	< 10	-1	754.0	32.9	0.956	1.189	1.293	24.00	1862	-0.1	0.000
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DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celcius

P_{av} = average station pressure in millimeters of mercury

$$P_f = (((\text{Temp in } ^\circ\text{Kelvin} * \text{Temp Slope}) + \text{Temp Int.}) * 1.868)$$

$$P_f = ((\text{Temp in } {}^\circ\text{Kelvin} * 0.0664) + (-0.4213)) * 1.868$$

$$P_o/P_a = \text{pressure ratio of } P_f \text{ and } P_{av} = 1 - Pf/P_{av}$$

Q_a = look up table volumetric flow rate

Q_{std} = total sample volumetric flow rate corrected to standard conditions

V_{std} = total sample volume corrected to standard conditions

TSP = mass concentration in $\mu\text{g}/\text{std m}^3$

Lead = mass concentration in $\mu\text{g}/\text{std m}^3$



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P6609

Big River Site #4 - QA

Sample Date 2012	Filter ID	TSP Net Wt. g	Lead Total Wt. mg	T _{av} C	P _{av} mmHg	P _t mmHg	Ratio P _t /P _{av}	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP µg/m ³	Lead µg/m ³
11/1/2012	8612322	0.1034	53	9	743.7	34.2	0.954	1.210	1.252	23.76	1785	58	0.030
11/6/2012	8614885	0.0138	25	6	744.9	33.8	0.955	1.205	1.261	23.54	1782	8	0.014
11/8/2012	8614866	0.0260	12	6	748.6	33.9	0.955	1.206	1.267	23.63	1796	14	0.007
11/13/2012	8614838	0.0976	35	2	756.4	33.3	0.956	1.200	1.293	23.59	1830	53	0.019
11/15/2012	8614819	0.0631	48	3	753.7	33.4	0.956	1.201	1.286	23.61	1821	35	0.027
11/20/2012	8639700	0.1498	250	10	747.8	34.3	0.954	1.212	1.257	23.61	1780	84	0.140
11/27/2012	8639672	0.0818	119	-1	754.0	32.9	0.956	1.194	1.298	23.54	1834	45	0.065
11/29/2012	8639652	0.0313	17	7	749.9	34.0	0.955	1.208	1.267	23.60	1794	17	0.009

Valid Samples:	8	8
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Monthly Average:	39	0.039
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Scheduled Samples:	8	8
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Standard Deviation:	26	0.045
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Percent Data Captured:	100%	100%
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Maximum:	84	0.140
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Minimum:	8	0.007
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NOTES

11/22/2012 - Holiday - No samples scheduled

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celcius

Q_a = look up table volumetric flow rate

P_{av} = average station pressure in millimeters of mercury

Q_{std} = total sample volumetric flow rate corrected to standard conditions

P_t = ((Temp in °Kelvin * Temp Slope)+Temp Int.)*1.868

V_{std} = total sample volume corrected to standard conditions

P_f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

TSP = mass concentration in µg/std m³

P_t/P_{av} = pressure ratio of P_t and P_{av} = 1 - P_f/P_{av}

Lead = mass concentration in µg/std m³

PM₁₀ Analysis

BARR

The Doe Run Company

Big River Site #4- Primary																			
Sampler ID P2952		PM10 Filter Net Wt.	T _{av}	P _{av}	P _f	Ratio P _o /P _a	Q _a	Q _{std}	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ µg/m ³								
Sample Date	Filter ID	g	C	mmHg	mmHg		m ³ /min	m ³ /min											
11/2/2012	290263	0.0469	9	744.9	34.2	0.954	1.126	1.167	23.71	1660	28								
11/5/2012	290253	0.0165	5	746.8	33.7	0.955	1.121	1.178	23.66	1672	10								
11/8/2012	290244	0.0182	6	748.6	33.9	0.955	1.122	1.179	23.67	1674	11								
11/11/2012	290234	0.0096	15	743.3	34.9	0.953	1.135	1.149	23.66	1632	6								
11/14/2012	290229	0.0352	2	755.1	33.3	0.956	1.116	1.201	23.62	1702	21								
11/17/2012	290220	0.0328	4	755.5	33.6	0.956	1.119	1.197	23.65	1698	19								
11/20/2012	290206	0.0374	10	747.8	34.3	0.954	1.127	1.169	23.60	1655	23								
11/26/2012	290896	0.0414	3	749.0	33.4	0.955	1.117	1.188	23.62	1684	25								
11/29/2012	290886	0.0202	7	749.9	34.0	0.955	1.124	1.179	23.62	1671	12								
Valid Samples: 9 Scheduled Samples: 9 Percent Data Captured: 100%				Monthly Average: 17 Standard Deviation: 8 Maximum: 28 Minimum: 6															
NOTES																			
11/23/2012 - Holiday - No samples scheduled																			
DEFINITIONS and CALCULATIONS																			
T _{av} = average temperature in degrees Celcius P _{av} = average station pressure in millimeters of mercury P _f = ((Temp in °Kelvin * Temp Slope))+Temp Int.)*1.868 P _f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868																			
P _o /P _a = pressure ratio of P _f and P _{av} = 1 - P _f /P _{av} Q _a = look up table volumetric flow rate Q _{std} = sample volumetric flow rate corrected to standard conditions V _{std} = sample volume corrected to standard conditions																			



PM₁₀ Analysis

The Doe Run Company

National Site #1 Ozark Insulation											
Sampler ID P2950											
Sample Date	Filter ID	PM10 Filter Net Wt.	T _{av}	P _{av}	P _f	Ratio P _f /P _a	Q _a	Q _{std}	Elapsed Time hr	Sample Volume V _{std}	Mass Conc. PM ₁₀ µg/m ³
11/2/2012	290268	0.0302	9	744.9	34.2	0.954	1.124	1.164	23.66	1653	18
11/5/2012	290258	0.0164	5	746.8	33.7	0.955	1.119	1.176	23.72	1674	10
11/8/2012	290249	0.0226	6	748.6	33.9	0.955	1.120	1.177	23.68	1672	14
11/11/2012	290231	0.0191	15	743.3	34.9	0.953	1.133	1.147	23.74	1634	12
11/14/2012	290224	0.0189	2	755.1	33.3	0.956	1.113	1.198	23.68	1703	11
11/17/2012	290215	0.0336	4	755.5	33.6	0.956	1.117	1.194	23.69	1698	20
11/20/2012	290211	0.0416	10	747.8	34.3	0.954	1.125	1.167	23.66	1656	25
11/26/2012	290201	0.0368	3	749.0	33.4	0.955	1.115	1.186	23.76	1691	22
11/29/2012	290891	0.0204	7	749.9	34.0	0.955	1.122	1.176	23.68	1671	12
Valid Samples:	9										
Scheduled Samples:	9										
Percent Data Captured:	100%										
Monthly Average:	16										
Standard Deviation:	5										
Maximum:	25										
Minimum:	10										
NOTES											
11/23/2012 - Holiday - No samples scheduled											
DEFINITIONS and CALCULATIONS											
T_{av} = average temperature in degrees Celcius											
P_{av} = average station pressure in millimeters of mercury											
$P_f = ((Temp \text{ in } ^\circ\text{Kelvin} * Temp \text{ Slope}) + Temp \text{ Int.}) * 1.868$											
$P_f = ((Temp \text{ in } ^\circ\text{Kelvin} * 0.0664) + (-0.4213)) * 1.868$											
P_f/P_a = pressure ratio of P_f and P_{av} = $1 - P_f/P_{av}$											
Q_a = look up table volumetric flow rate											
Q_{std} = sample volumetric flow rate corrected to standard conditions											
V_{std} = sample volume corrected to standard conditions											



PM₁₀ Analysis

The Doe Run Company



PM₁₀ Analysis

The Doe Run Company

National Site #3 - Water Plant																			
SAMPLER ID	P2951	PM10 Filter Net Wt.	T _{av}	P _{av}	P _f	Ratio P _o /P _a	Q _a	Q _{std}	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ µg/m ³								
Sample Date	Filter ID	g	C	mmHg	mmHg		m ³ /min	m ³ /min											
11/2/2012	290265	0.0299	9	744.9	34.2	0.954	1.127	1.168	23.47	1645	18								
11/5/2012	290255	0.0185	5	746.8	33.7	0.955	1.122	1.180	23.48	1662	11								
11/8/2012	290246	0.0171	6	748.6	33.9	0.955	1.124	1.180	23.43	1659	10								
11/11/2012	290236	0.0111	15	743.3	34.9	0.953	1.137	1.151	23.47	1620	7								
11/14/2012	290227	0.0141	2	755.1	33.3	0.956	1.117	1.203	23.38	1687	8								
11/17/2012	290218	0.0333	4	755.5	33.6	0.956	1.121	1.198	23.47	1687	20								
11/20/2012	290208	0.0362	10	747.8	34.3	0.954	1.129	1.171	23.46	1648	22								
11/26/2012	290898	0.0302	3	749.0	33.4	0.955	1.118	1.190	23.51	1679	18								
11/29/2012	290888	0.0156	7	749.9	34.0	0.955	1.125	1.180	23.44	1660	9								
Valid Samples: 9 Scheduled Samples: 9 Percent Data Captured: 100%				Monthly Average: 14 Standard Deviation: 6 Maximum: 22 Minimum: 7															
NOTES 11/23/2012 - Holiday - No samples scheduled																			
Filter Blank Nominal Airflow Tolerance ≤ 5 µg/m ³																			
11/27/2012	290892	-0.0004	25	760.0	36.2	0.952	1.153	1.153	24.00	1660	-0.2								
DEFINITIONS and CALCULATIONS																			
T _{av} = average temperature in degrees Celcius P _{av} = average station pressure in millimeters of mercury P _f = ((Temp in °Kelvin * Temp Slope))+Temp Int.)*1.868 P _f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868																			
P _o /P _a = pressure ratio of P _f and P _{av} = 1 - P _f /P _{av} Q _a = look up table volumetric flow rate Q _{std} = sample volumetric flow rate corrected to standard conditions V _{std} = sample volume corrected to standard conditions																			



PM₁₀ Analysis

The Doe Run Company

Lab Results (Lead and Cadmium)



120 East Davis Street
P.O. Box 30
Fayette, MO 65248-0030

Phone: (660) 248-1911
Fax: (660) 248-1921
<http://www.inovatia.com>

ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-1166
Date Received: 11/28/12
Analysis Method: 40 CFR §50
Appendix G

Location **National**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
125675	8612310	11/01/12	#3 East - WTP	64	< 10	12/03/12 - DS
125678	8612302	11/02/12	#3 East - WTP	11	< 10	12/03/12 - DS
125681	8614892	11/05/12	#3 East - WTP	< 10	< 10	12/03/12 - DS
125684	8614882	11/06/12	#3 East - WTP	38	< 10	12/03/12 - DS
125687	8614873	11/07/12	#3 East - WTP	11	< 10	12/03/12 - DS
125690	8614863	11/08/12	#3 East - WTP	< 10	< 10	12/03/12 - DS
125693	8614854	11/09/12	#3 East - WTP	< 10	< 10	12/03/12 - DS
125715	8612307	11/01/12	#1 Ozark	40	< 10	12/03/12 - DS
125716	8612308	11/01/12	#2 Soccer	46	< 10	12/03/12 - DS
125717	8612306	11/02/12	#1 Ozark	14	< 10	12/03/12 - DS
125718	8612305	11/02/12	#2 Soccer	17	< 10	12/03/12 - DS
125719	8614889	11/05/12	#1 Ozark	21	< 10	12/03/12 - DS
125720	8614890	11/05/12	#2 Soccer	24	< 10	12/03/12 - DS
125721	8614879	11/06/12	#1 Ozark	26	< 10	12/03/12 - DS
125722	8614880	11/06/12	#2 Soccer	21	< 10	12/03/12 - DS
125723	8614870	11/07/12	#1 Ozark	33	< 10	12/03/12 - DS
125724	8614871	11/07/12	#2 Soccer	31	< 10	12/03/12 - DS
125725	8614860	11/08/12	#1 Ozark	48	< 10	12/03/12 - DS
125726	8614861	11/08/12	#2 Soccer	43	< 10	12/03/12 - DS
125727	8614851	11/09/12	#1 Ozark	123	< 10	12/03/12 - DS
125728	8614852	11/09/12	#2 Soccer	136	< 10	12/03/12 - DS

Submitted by:

Jennifer Vandelicht
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12/4/12

Date

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-1171
Date Received: 11/30/12
Analysis Method: 40 CFR §50
Appendix G

Location **National**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
125764	8614848	11/12/12	#3 East - WTP	19	< 10	12/04/12 - DS
125767	8614835	11/13/12	#3 East - WTP	16	< 10	12/04/12 - DS
125770	8614826	11/14/12	#3 East - WTP	< 10	< 10	12/04/12 - DS
125773	8614816	11/15/12	#3 East - WTP	33	< 10	12/04/12 - DS
125776	8614807	11/16/12	#3 East - WTP	20	< 10	12/04/12 - DS
125792	8614845	11/12/12	#1 Ozark	16	< 10	12/06/12 - DS
125793	8614846	11/12/12	#2 Soccer	26	< 10	12/06/12 - DS
125794	8614832	11/13/12	#1 Ozark	17	< 10	12/06/12 - DS
125795	8614833	11/13/12	#2 Soccer	45	< 10	12/04/12 - DS
125796	8614823	11/14/12	#1 Ozark	16	< 10	12/04/12 - DS
125797	8614824	11/14/12	#2 Soccer	37	< 10	12/04/12 - DS
125798	8614813	11/15/12	#1 Ozark	29	< 10	12/04/12 - DS
125799	8614814	11/15/12	#2 Soccer	43	< 10	12/04/12 - DS
125800	8614804	11/16/12	#1 Ozark	24	< 10	12/04/12 - DS
125801	8614805	11/16/12	#2 Soccer	42	< 10	12/04/12 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-1222
Date Received: 12/13/12
Analysis Method: 40 CFR §50
Appendix G

Location **National**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
125995	8639697	11/19/12	#3 East - WTP	50	< 10	12/18/12 - DS
125998	8639688	11/20/12	#3 East - WTP	81	< 10	12/18/12 - DS
126001	8639679	11/26/12	#3 East - WTP	14	< 10	12/18/12 - DS
126004	8639665	11/27/12	#3 East - WTP	< 10	< 10	12/18/12 - DS
126005	8639669	11/27/12	#3 East - WTP	33	< 10	12/18/12 - DS
126008	8639659	11/28/12	#3 East - WTP	30	< 10	12/18/12 - DS
126011	8639649	11/29/12	#3 East - WTP	< 10	< 10	12/18/12 - DS
126014	8639641	11/30/12	#3 East - WTP	11	< 10	12/18/12 - DS
126036	8639694	11/19/12	#1 Ozark	34	< 10	12/18/12 - DS
126037	8639695	11/19/12	#2 Soccer	97	< 10	12/18/12 - DS
126038	8639685	11/20/12	#1 Ozark	31	< 10	12/18/12 - DS
126039	8639686	11/20/12	#2 Soccer	59	< 10	12/18/12 - DS
126040	8639676	11/26/12	#1 Ozark	15	< 10	12/18/12 - DS
126041	8639677	11/26/12	#2 Soccer	14	< 10	12/18/12 - DS
126042	8639666	11/27/12	#1 Ozark	64	< 10	12/18/12 - DS
126043	8639667	11/27/12	#2 Soccer	99	< 10	12/18/12 - DS
126044	8639656	11/28/12	#1 Ozark	54	< 10	12/18/12 - DS
126045	8639657	11/28/12	#2 Soccer	94	< 10	12/18/12 - DS
126046	8639646	11/29/12	#1 Ozark	44	< 10	12/18/12 - DS
126047	8639647	11/29/12	#2 Soccer	69	< 10	12/18/12 - DS
126048	8639644	11/30/12	#1 Ozark	27	< 10	12/18/12 - DS
126049	8639645	11/30/12	#2 Soccer	71	< 10	12/18/12 - DS

Submitted by:

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-1166
Date Received: 11/28/12
Analysis Method: 40 CFR §50
Appendix G

Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
125663	8612312	11/01/12	#4 Primary	79	< 10	12/03/12 - DS
125664	8612322	11/01/12	#4 QA	53	< 10	12/03/12 - DS
125665	8612304	11/02/12	#4 Primary	29	< 10	12/03/12 - DS
125666	8614894	11/05/12	#4 Primary	< 10	< 10	12/03/12 - DS
125667	8614884	11/06/12	#4 Primary	24	< 10	12/03/12 - DS
125668	8614885	11/06/12	#4 QA	25	< 10	12/03/12 - DS
125669	8614875	11/07/12	#4 Primary	38	< 10	12/03/12 - DS
125670	8614865	11/08/12	#4 Primary	< 10	< 10	12/03/12 - DS
125671	8614866	11/08/12	#4 QA	12	< 10	12/03/12 - DS
125672	8614856	11/09/12	#4 Primary	< 10	< 10	12/03/12 - DS

Submitted by:

Jennifer Vandevicht
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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-1171
Date Received: 11/30/12
Analysis Method: 40 CFR §50
Appendix G

Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
125755	8614850	11/12/12	#4 Primary	13	< 10	12/04/12 - DS
125756	8614837	11/13/12	#4 Primary	34	< 10	12/04/12 - DS
125757	8614838	11/13/12	#4 QA	35	< 10	12/04/12 - DS
125758	8614828	11/14/12	#4 Primary	39	< 10	12/04/12 - DS
125759	8614818	11/15/12	#4 Primary	52	< 10	12/04/12 - DS
125760	8614819	11/15/12	#4 QA	48	< 10	12/04/12 - DS
125761	8614809	11/16/12	#4 Primary	28	< 10	12/04/12 - DS

Submitted by:

Jennifer Vandelicht
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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-1222
Date Received: 12/13/12
Analysis Method: 40 CFR §50
Appendix G

Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
125983	8639699	11/19/12	#4 Primary	40	< 10	12/18/12 - DS
125984	8639690	11/20/12	#4 Primary	249	< 10	12/18/12 - DS
125985	8639700	11/20/12	#4 QA	250	< 10	12/18/12 - DS
125986	8639681	11/26/12	#4 Primary	38	< 10	12/18/12 - DS
125987	8639671	11/27/12	#4 Primary	113	< 10	12/18/12 - DS
125988	8639672	11/27/12	#4 QA	119	< 10	12/18/12 - DS
125989	8639661	11/28/12	#4 Primary	82	< 10	12/18/12 - DS
125990	8639651	11/29/12	#4 Primary	17	< 10	12/18/12 - DS
125991	8639652	11/29/12	#4 QA	17	< 10	12/18/12 - DS
125992	8639643	11/30/12	#4 Primary	< 10	< 10	12/18/12 - DS

Submitted by: _____

Jennifer Vondelicht
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Inovatia Laboratories, LLC, Inc. Quality Assessment
Software Version 1.0.0.0
Date: 2012.12.19 06:45:01 -06'00'

12/19/12

Date

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Meteorological Data

Meteorological Report
The Doe Run Company
Wind Speed

Site Name: Rivermines

Average Interval: 01 Hour

Units: mph

Sampling Frequency: 01 Second

2012	Hour																										
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max
1-Nov	0.5	0.4	1.0	1.2	0.4	2.0	1.2	0.1	0.3	1.7	3.3	2.9	2.3	3.0	2.4	2.0	1.4	0.7	0.1	0.1	0.3	0.4	1.5	0.7	3.3	1.3	
2-Nov	0.2	1.3	1.9	0.1	2.6	3.0	1.2	2.3	3.4	2.9	2.8	3.1	3.9	2.7	3.3	3.8	2.3	1.2	1.0	0.9	0.7	0.6	1.0	0.4	3.9	1.9	
3-Nov	1.2	2.9	1.1	1.2	1.5	2.1	1.4	1.5	2.7	2.5	3.1	6.5	7.9	7.8	8.3	9.2	7.5	7.1	5.5	4.0	0.5	0.1	0.1	0.5	9.2	3.6	
4-Nov	1.2	4.0	3.3	2.5	3.1	1.9	2.3	1.6	2.3	2.6	1.6	3.0	1.8	2.0	1.0	1.1	1.7	0.4	0.1	0.1	0.0	0.0	0.1	1.0	4.0	1.6	
5-Nov	1.7	0.8	0.2	0.3	0.9	1.3	1.8	5.5	6.5	4.3	4.3	4.3	4.2	3.0	2.6	3.2	2.4	2.7	3.4	3.0	3.0	3.0	2.2	1.7	1.6	6.5	2.7
6-Nov	0.9	0.1	0.7	0.5	1.0	0.4	1.0	1.5	2.8	2.9	4.5	3.6	4.9	5.7	3.9	3.4	3.0	2.4	0.9	0.6	1.0	1.0	1.2	5.7	2.1		
7-Nov	0.7	3.5	0.3	0.4	1.8	1.4	5.6	5.7	9.1	9.4	10.2	9.9	8.1	7.7	6.5	4.9	2.8	1.3	0.1	0.1	0.0	0.1	0.6	0.3	10.2	3.8	
8-Nov	0.0	0.2	0.4	1.7	0.4	0.1	0.0	0.2	0.1	5.0	7.3	6.5	6.8	6.1	5.7	5.9	4.8	3.6	3.5	3.9	2.8	6.4	6.4	6.8	7.3	3.5	
9-Nov	6.0	6.3	5.7	6.4	8.1	8.0	6.4	5.4	7.7	7.9	9.5	9.3	8.3	11.0	11.0	8.0	8.4	8.9	9.8	10.2	10.2	11.8	9.6	10.3	11.8	8.5	
10-Nov	9.0	8.6	8.0	7.5	8.2	7.3	5.2	5.1	3.7	7.6	9.8	11.8	11.4	13.0	13.6	13.0	10.6	10.6	10.4	12.4	13.7	13.9	14.1	13.7	14.1	10.1	
11-Nov	12.5	9.3	10.1	11.4	11.5	10.8	10.6	11.6	12.4	15.7	17.3	14.4	16.2	15.8	11.4	10.1	4.8	3.2	2.5	1.5	0.5	0.1	6.8	6.3	17.3	9.5	
12-Nov	6.2	7.5	7.4	6.3	7.9	4.4	3.7	3.0	4.5	5.7	6.1	6.4	6.5	6.9	6.0	5.4	3.0	0.7	0.2	0.0	0.1	0.0	0.2	0.3	7.9	4.1	
13-Nov	1.6	2.0	0.5	0.2	0.0	0.1	0.7	1.2	0.2	0.7	0.5	1.4	3.1	4.4	2.0	1.6	1.8	1.2	1.7	0.4	0.0	0.1	0.1	0.2	4.4	1.1	
14-Nov	0.1	0.1	0.0	0.2	0.0	0.2	0.1	0.1	0.5	0.8	1.5	2.1	1.9	2.0	2.2	2.4	1.7	0.6	0.0	0.3	0.1	0.0	0.0	0.1	2.4	0.7	
15-Nov	0.0	0.3	0.1	0.4	0.0	0.6	0.5	0.0	0.0	0.3	0.8	1.0	1.3	2.4	1.4	0.2	0.1	0.2	0.1	0.6	0.1	0.0	0.1	0.1	2.4	0.4	
16-Nov	0.1	0.0	0.1	0.2	0.2	0.0	0.8	0.7	0.2	0.1	1.6	3.2	3.1	2.3	2.5	2.3	1.5	0.8	0.0	0.0	0.1	0.0	0.1	0.1	3.2	0.8	
17-Nov	0.1	0.1	0.0	0.6	1.0	1.0	0.2	1.3	0.6	0.4	1.0	1.1	2.5	5.0	3.7	1.7	0.8	1.3	0.2	0.0	0.0	0.1	0.1	0.1	5.0	1.0	
18-Nov	0.0	0.0	0.0	0.1	0.7	0.3	0.1	0.1	0.2	0.5	1.3	1.4	2.0	4.9	4.9	6.1	3.6	0.5	0.8	0.1	0.2	0.2	0.1	0.1	6.1	1.2	
19-Nov	0.1	0.2	0.2	0.1	0.3	0.3	0.1	0.3	0.1	3.6	6.9	7.4	5.8	6.5	5.6	3.8	3.2	2.4	1.0	0.6	3.9	1.7	0.1	0.2	7.4	2.3	
20-Nov	0.1	0.0	0.2	0.1	0.1	0.0	0.1	0.0	0.1	2.6	3.1	3.9	5.6	6.2	6.5	5.9	5.6	0.2	0.0	0.2	0.2	0.1	0.1	0.1	6.5	1.7	
21-Nov	0.2	0.1	0.3	1.3	0.4	0.6	1.2	0.7	1.0	0.3	0.6	1.3	1.3	2.6	2.5	1.9	2.6	0.8	4.4	3.9	5.4	5.5	5.1	4.4	5.5	2.0	
22-Nov	0.6	0.1	0.3	0.2	1.0	2.6	1.5	0.3	2.7	9.0	12.1	11.2	8.6	9.0	8.9	10.7	9.4	7.2	5.3	3.0	4.7	8.0	5.4	5.3	12.1	5.3	
23-Nov	6.4	12.0	7.5	7.2	1.7	1.7	2.4	3.6	9.2	14.0	8.8	8.9	8.7	8.8	9.5	8.0	5.9	5.0	4.0	4.1	4.6	6.2	6.6	6.6	14.0	6.7	
24-Nov	3.1	2.1	2.5	3.0	3.3	1.8	1.3	2.3	5.5	6.4	4.1	2.5	1.6	2.8	1.3	2.1	0.0	0.8	3.3	2.8	3.7	3.0	5.5	6.4	2.8		
25-Nov	5.5	3.8	3.6	2.7	1.3	0.4	0.2	0.5	2.1	6.6	6.3	4.7	3.8	4.1	2.4	1.7	2.7	0.6	0.3	0.1	0.1	0.0	0.2	6.6	2.2		
26-Nov	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.6	4.8	5.3	6.1	7.1	6.9	9.1	6.8	9.7	8.8	9.8	7.7	6.8	7.9	4.8	3.1	7.0	9.8	4.7	
27-Nov	7.8	5.0	4.3	4.2	1.5	2.8	3.9	2.3	4.9	2.7	2.1	3.3	2.2	1.4	1.1	0.3	0.0	0.2	0.0	0.0	0.1	0.1	0.1	0.7	7.8	2.1	
28-Nov	0.2	0.3	0.4	0.5	0.0	0.0	0.0	0.1	0.1	0.6	0.8	1.6	1.3	2.9	2.6	1.6	1.6	1.0	0.1	0.7	3.0	0.4	2.3	0.4	3.0	0.9	
29-Nov	0.1	0.1	0.1	0.1	0.5	0.4	0.3	0.3	3.2	9.8	9.8	11.0	9.6	8.0	10.2	8.5	7.9	4.2	5.2	7.8	6.0	6.6	7.2	7.0	11.0	5.2	
30-Nov	1.8	6.3	3.8	3.7	3.2	3.7	3.3	2.7	4.9	6.3	7.7	7.6	6.2	4.9	5.3	4.6	3.6	3.5	6.0	4.7	2.6	3.7	3.6	6.2	7.7	4.6	

	Maximum Hour//Monthly Average	17.3	3.3
	Total Hours in Month	720	
	Valid Hours//Percent Data Captured	720	100.0%

Meteorological Report
The Doe Run Company
Wind Direction

Site Name: Rivermines

Average Interval: 01 Hour

Units: Degrees

Sampling Frequency: 01 Second

2012	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	24 Hour Avg
	Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	243	248	243	240	227	239	238	190	245	266	253	280	264	226	227	205	199	169	308	191	219	230	230	275	236	
2-Nov	190	332	335	338	341	347	357	8	33	55	73	68	69	99	86	65	70	74	95	77	104	104	78	96	146	
3-Nov	108	99	102	143	91	58	84	86	79	72	12	339	343	338	338	334	331	353	341	327	10	320	189	43	189	
4-Nov	356	19	21	15	13	22	23	353	12	9	15	29	31	44	48	55	74	71	131	22	152	95	215	79	79	
5-Nov	73	104	6	106	91	157	152	155	139	150	177	168	161	129	93	80	72	67	71	51	61	65	40	61	101	
6-Nov	67	353	89	336	337	339	161	187	211	239	238	204	208	239	255	256	274	263	228	217	234	246	285	251	238	
7-Nov	283	308	304	272	299	291	315	317	330	330	327	334	345	330	336	320	320	313	352	182	181	173	212	186	290	
8-Nov	173	213	215	225	204	170	166	239	347	187	195	206	203	181	172	159	170	167	179	178	194	185	199	195	195	
9-Nov	208	199	204	214	215	201	187	182	194	192	195	202	191	195	197	184	179	184	192	194	194	193	194	194	195	
10-Nov	199	199	202	198	192	188	166	177	172	196	194	192	194	192	189	190	181	186	187	187	192	194	194	191	189	
11-Nov	187	177	187	187	185	182	189	184	187	190	187	185	187	184	183	194	280	266	260	274	219	210	310	287	212	
12-Nov	287	290	299	282	299	289	286	281	285	289	285	285	278	279	271	268	267	260	195	184	179	177	213	234	261	
13-Nov	249	247	235	200	170	204	219	236	248	337	19	13	6	1	5	59	69	93	109	120	76	339	323	340	163	
14-Nov	217	173	169	1	282	337	331	206	107	339	67	92	50	68	70	76	74	84	145	149	149	337	173	189	170	163
15-Nov	173	227	219	231	166	232	231	196	319	336	3	13	59	24	59	128	12	86	70	156	351	271	146	196	163	
16-Nov	188	180	218	201	218	173	229	218	250	101	84	44	76	77	64	75	74	77	154	227	172	188	183	186	152	
17-Nov	206	164	223	237	207	245	181	287	240	353	24	77	79	90	105	86	72	87	63	348	340	142	323	327	188	
18-Nov	171	204	207	324	218	200	295	144	215	1	0	5	69	140	148	160	168	155	152	356	153	190	351	351	182	
19-Nov	339	355	143	117	130	38	165	166	166	192	204	222	214	197	200	207	184	200	184	177	210	213	208	198	193	
20-Nov	238	193	219	210	146	343	190	157	290	247	263	296	304	299	312	312	330	338	208	295	310	199	194	182	253	
21-Nov	224	188	215	232	226	227	224	226	230	323	11	48	46	92	86	70	112	148	168	164	177	183	191	186	166	
22-Nov	170	160	172	238	198	171	202	224	221	213	206	204	204	200	205	198	196	187	195	207	234	233	213	239	206	
23-Nov	289	321	319	315	296	289	253	256	296	317	301	298	298	294	303	293	295	294	292	300	308	318	319	318	299	
24-Nov	305	297	300	298	298	295	302	293	309	319	313	282	231	263	232	222	239	145	164	179	176	190	186	212	252	
25-Nov	208	195	210	210	158	146	164	97	222	240	247	245	246	247	264	213	176	134	146	33	121	150	182	100	181	
26-Nov	268	204	176	0	322	352	353	13	24	27	30	28	24	13	12	17	10	6	7	6	8	6	349	338	108	
27-Nov	340	336	336	325	315	323	335	336	352	354	360	313	79	357	28	192	142	144	313	174	214	215	212	268		
28-Nov	188	204	211	207	167	204	160	214	280	268	352	41	62	90	85	113	150	159	166	156	172	171	175	331	180	
29-Nov	22	4	134	141	156	139	167	283	204	209	199	197	196	189	188	194	190	180	187	204	206	208	199	199	175	
30-Nov	206	205	218	227	219	218	199	202	202	213	230	220	217	209	211	195	173	172	182	182	170	182	204	205	202	

	Total Hours in Month	720
	Valid Hours	720
	Percent Data Captured	100.0%

Meteorological Report

The Doe Run Company

$\Sigma\Theta$

Site Name: Rivermines

Average Interval: 01 Hour

Units: Degrees

2012	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	24 Hour Avg
Day																										
1-Nov	7.5	5.0	7.8	9.2	8.9	13.4	9.3	10.3	7.8	17.7	18.8	28.6	19.8	25.0	17.5	12.2	9.8	9.7	5.5	4.7	6.5	6.6	12.1	21.9	12	
2-Nov	6.3	7.7	7.8	4.0	6.9	8.9	10.2	13.2	21.7	28.0	24.6	27.1	32.3	32.8	28.7	19.2	16.0	12.9	13.4	11.7	13.9	10.3	11.7	11.2	16	
3-Nov	14.3	19.2	16.9	15.9	19.0	15.1	14.1	18.8	20.8	20.9	23.7	21.8	19.3	18.0	17.5	16.1	15.9	17.2	15.4	11.7	19.5	5.0	5.8	13.2	16	
4-Nov	14.3	19.1	19.2	20.2	22.2	22.3	16.5	16.2	17.8	24.6	31.5	34.9	45.2	31.8	36.1	28.1	15.2	5.2	2.7	4.5	0.2	4.5	2.4	29.9	19	
5-Nov	42.2	42.8	8.2	18.5	30.0	22.9	22.8	26.4	21.2	25.9	21.2	22.1	20.3	20.4	24.0	21.4	21.9	18.0	20.1	19.2	19.1	19.0	17.9	19.5	23	
6-Nov	18.4	1.5	17.5	8.3	14.1	16.5	14.4	21.3	21.1	18.1	22.8	20.7	17.9	19.7	20.6	21.1	20.1	14.0	17.0	25.4	13.5	28.5	27.2	16.6	18	
7-Nov	11.7	12.5	4.4	4.4	12.1	12.1	12.8	13.4	16.3	15.9	17.6	15.7	17.8	17.0	17.1	17.1	11.4	6.9	3.7	2.9	1.5	4.7	8.1	5.8	11	
8-Nov	0.9	3.6	6.2	15.0	6.5	0.4	1.6	4.5	5.1	35.1	20.1	20.9	24.5	26.9	26.3	21.2	19.2	16.2	18.6	16.5	15.5	16.7	14.8	15.9	15	
9-Nov	14.9	15.0	19.3	15.3	16.0	14.6	15.0	17.6	18.3	17.4	17.9	18.6	20.2	19.0	18.3	20.5	18.3	17.1	17.5	16.7	17.1	16.2	16.9	16.8	17	
10-Nov	16.3	16.0	17.0	18.1	17.4	17.8	20.2	21.1	20.6	23.0	21.9	18.8	19.1	19.1	17.5	16.5	17.1	17.0	16.1	18.1	17.4	17.3	16.8	17.1	18	
11-Nov	17.6	17.1	17.1	16.2	16.6	17.0	18.2	17.3	19.2	17.1	17.0	18.1	18.0	17.2	18.3	26.8	26.5	27.5	20.7	22.2	26.3	3.9	14.9	22.8	19	
12-Nov	21.6	22.6	20.3	21.3	20.0	19.7	18.8	18.5	23.9	24.8	22.5	24.1	23.7	25.9	24.2	21.1	19.8	8.8	7.4	0.6	4.3	0.4	5.3	6.7	17	
13-Nov	10.9	9.6	8.6	3.8	0.4	3.7	8.7	11.0	6.8	29.6	28.5	37.9	36.9	33.8	44.9	27.0	12.9	12.4	15.4	13.0	2.2	13.8	4.7	5.6	16	
14-Nov	8.0	1.4	0.1	10.8	1.3	6.4	3.9	5.1	22.6	14.7	29.6	39.7	32.2	32.7	37.7	25.8	13.2	8.6	1.3	7.9	2.8	0.4	1.8	0.2	13	
15-Nov	0.3	5.1	3.7	7.8	0.2	9.4	7.2	1.3	13.3	17.9	8.7	24.4	35.5	26.2	21.3	20.8	5.1	6.2	10.6	13.7	6.7	20.7	2.2	3.8	11	
16-Nov	5.4	0.4	3.4	3.8	6.4	0.5	9.8	8.0	5.3	8.3	22.2	25.9	46.3	34.3	30.9	22.5	12.6	8.6	0.2	0.8	0.2	1.1	3.1	11		
17-Nov	4.6	0.5	2.0	8.3	10.1	12.7	4.9	14.9	10.4	8.9	12.4	32.7	25.6	23.8	25.2	19.8	9.1	13.2	5.7	2.7	3.6	0.4	1.3	4.1	11	
18-Nov	1.1	3.3	1.5	2.6	9.1	5.3	3.0	1.0	19.5	9.4	10.5	16.6	33.4	30.8	22.5	19.5	7.2	14.4	0.8	11.8	25.1	7.9	11.2	12		
19-Nov	10.3	6.5	14.9	2.6	5.8	20.4	10.5	28.7	4.7	13.2	18.9	18.9	19.2	15.7	16.0	15.3	13.4	13.3	12.4	8.3	15.7	10.9	4.7	8.4	13	
20-Nov	2.2	0.6	3.0	4.5	0.8	7.4	3.1	3.9	7.8	15.6	20.8	26.4	22.8	24.6	22.8	19.7	10.4	2.8	0.0	4.1	3.8	0.7	1.2	8.2	9	
21-Nov	4.8	0.5	6.4	11.5	7.6	10.6	11.8	9.6	14.5	23.9	20.2	31.0	31.6	31.1	20.5	17.5	14.2	9.8	14.4	14.2	15.1	13.2	11.3	11.8	15	
22-Nov	10.5	3.5	21.7	15.0	13.6	12.5	14.4	15.3	17.9	18.5	16.4	17.9	18.0	18.5	16.5	15.4	15.9	17.1	18.1	24.9	15.8	16.8	16.5	17.5	16	
23-Nov	17.8	13.5	12.0	11.8	13.2	15.8	10.3	14.0	21.2	15.4	21.4	20.7	23.7	23.6	19.8	22.5	18.8	18.1	16.6	14.7	15.0	13.2	13.4	12.5	17	
24-Nov	12.6	11.6	13.5	12.5	13.0	12.8	11.9	14.8	18.1	17.3	28.2	33.6	29.8	34.1	31.3	21.5	2.0	6.8	14.6	14.5	15.0	14.2	15.0	15.8	17	
25-Nov	16.5	13.6	12.5	12.0	12.2	6.4	4.2	7.3	15.4	19.9	19.7	24.2	27.3	24.3	25.8	15.5	28.2	19.1	12.7	17.1	3.4	4.2	0.1	2.7	14	
26-Nov	25.4	5.2	0.1	0.0	1.0	12.9	14.6	6.0	17.3	20.9	22.2	20.2	19.4	15.7	18.5	16.1	16.4	16.4	14.5	15.4	16.1	13.9	12.4	15.6	14	
27-Nov	15.3	13.0	12.6	8.4	11.5	12.3	13.7	15.1	16.3	22.6	29.5	31.6	31.8	33.8	21.4	33.0	1.0	4.7	0.6	0.8	0.5	3.9	4.5	10.1	15	
28-Nov	7.2	5.6	7.5	8.2	2.3	1.8	0.2	4.7	15.7	17.8	19.2	25.7	33.7	29.2	28.7	18.5	14.0	9.0	3.9	26.8	12.6	17.2	11.2	22.1	14	
29-Nov	4.2	4.2	6.1	9.5	5.4	8.6	8.3	25.9	32.3	16.7	18.1	16.5	17.4	19.7	17.3	15.9	15.1	15.4	14.8	17.4	19.5	18.9	17.1	17.6	15	
30-Nov	18.6	17.2	16.6	17.6	15.0	15.8	11.5	12.4	15.7	19.0	19.7	20.5	23.0	22.8	21.6	17.7	14.6	13.6	14.5	16.8	16.7	14.4	13.3	14.6	17	

BARR	Total Hours In Month	720
	Valid Hours	720
	Percent Data Captured	100.0%

Meteorological Report
The Doe Run Company
Temperature

Site Name: Rivermines

Average Interval: 01 Hour

Units: Deg. C

Sampling Frequency: 01 Second

2012	Hour	24 Hour																									
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max
1-Nov	2	1	1	0	0	0	1	4	8	13	15	17	17	17	18	18	18	18	13	10	8	7	7	7	7	18.3	8.7
2-Nov	6	6	6	4	4	5	4	5	7	9	10	12	13	14	15	14	13	11	10	9	9	8	8	7	7	14.7	8.8
3-Nov	7	7	7	7	7	6	6	7	9	11	12	13	13	12	12	11	10	9	9	7	5	3	2	1	1	13.4	8.0
4-Nov	2	4	4	4	4	4	3	3	4	5	7	9	10	11	11	12	11	9	7	4	4	3	4	5	11.6	6.0	
5-Nov	5	5	5	6	6	5	5	5	5	5	5	6	6	6	6	6	6	6	6	5	5	5	5	5	5	6.2	5.4
6-Nov	5	4	4	4	4	4	4	5	6	6	7	8	9	8	8	8	7	6	5	5	5	5	6	6	8.7	5.9	
7-Nov	7	7	5	6	6	6	7	7	8	9	8	8	8	8	8	7	4	2	1	0	0	-1	8.6	5.7			
8-Nov	-1	-2	-2	-2	-2	-3	-3	-1	3	8	11	12	13	14	14	14	13	11	10	9	9	10	10	10	14.3	6.4	
9-Nov	10	10	10	11	12	12	12	13	15	16	17	19	20	22	22	22	21	19	18	17	17	17	16	16	22.5	16.1	
10-Nov	16	15	16	16	15	15	14	15	16	19	21	22	24	24	24	23	21	19	18	18	18	18	18	18	24.0	18.5	
11-Nov	17	17	17	17	16	16	17	17	18	19	19	19	19	18	16	12	11	10	10	10	10	10	7	5	19.4	14.7	
12-Nov	3	2	1	1	0	-1	-2	-1	1	3	5	6	7	8	8	8	7	5	2	-1	-1	-2	-2	-3	8.2	2.3	
13-Nov	-3	-3	-3	-4	-5	-5	-5	-5	-3	1	4	6	8	9	10	10	10	8	6	5	4	2	0	-1	9.7	2.1	
14-Nov	-1	-2	-2	-2	-2	-1	-1	-1	1	3	6	7	8	9	10	9	8	6	1	0	-1	-2	-3	-3	9.6	1.9	
15-Nov	-4	-4	-4	-5	-5	-5	-5	-5	-4	-1	3	6	8	10	11	12	12	10	8	7	7	5	4	3	1	11.5	2.9
16-Nov	0	0	-1	-1	-2	-2	-2	-1	3	7	10	12	13	14	14	14	13	10	5	3	1	0	-1	-1	14.1	4.6	
17-Nov	-2	-2	-3	-3	-3	-4	-4	-3	2	6	9	12	13	14	14	15	13	10	6	3	2	0	-1	-1	14.6	3.9	
18-Nov	-2	-2	-3	-3	-3	-3	-4	-2	2	6	11	15	17	18	17	17	15	11	9	6	5	5	4	3	17.6	5.7	
19-Nov	3	3	4	4	3	3	3	4	9	13	15	15	15	14	14	14	13	13	12	11	12	10	8	6	15.0	9.3	
20-Nov	6	6	6	5	4	3	2	4	9	14	16	17	18	18	18	17	15	12	9	8	8	7	6	4	18.2	9.7	
21-Nov	3	3	2	3	3	2	2	2	4	6	9	15	17	18	18	18	17	13	14	13	12	11	11	11	18.4	9.5	
22-Nov	8	6	5	5	5	7	7	7	13	15	16	17	18	20	19	18	17	16	16	16	13	12	13	13	19.6	12.6	
23-Nov	13	11	9	8	6	5	4	5	7	7	6	6	7	8	7	6	5	3	2	1	1	0	-1	-1	12.7	5.2	
24-Nov	-2	-3	-3	-4	-4	-4	-5	-4	-2	-1	0	2	2	4	4	5	3	2	2	2	2	2	2	3	4.8	0.2	
25-Nov	3	3	4	4	3	2	0	1	6	10	12	14	15	16	16	16	14	10	6	4	3	2	0	0	16.0	6.6	
26-Nov	-1	-1	-1	-2	-2	-2	-1	0	3	5	7	8	9	7	6	6	6	5	5	4	4	2	1	1	8.6	2.9	
27-Nov	0	-2	-3	-4	-5	-5	-5	-3	-1	1	2	3	4	5	5	4	0	-2	-3	-4	-4	-4	-5	4.8	-1.4		
28-Nov	-5	-6	-6	-6	-6	-6	-6	-5	-1	3	6	7	9	10	10	10	9	5	2	1	3	2	2	0	10.3	1.3	
29-Nov	-2	-2	-2	-2	-2	-1	0	0	6	10	12	13	14	15	16	15	13	12	10	10	10	10	10	10	15.6	7.3	
30-Nov	9	9	9	9	9	9	8	9	11	13	16	16	17	18	19	18	16	15	14	13	12	11	11	12	18.5	12.6	



Maximum Hour//Monthly Average	24.0
Total Hours in Month	720
Valid Hours	720
Percent Data Captured	100.0%

Meteorological Report
The Doe Run Company
Site Pressure

Average Interval: 01 Hour

Units: mmHg

Sampling Frequency: 01 Second

Site Name: Rivermines

2012	Day	Hour																								24 Hour	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max	Avg
	1-Nov	745	745	745	745	745	746	746	745	745	745	744	744	743	743	742	742	742	742	742	742	742	742	742	746	744	
	2-Nov	743	743	744	744	744	745	745	746	746	746	746	746	745	745	745	745	745	745	745	745	745	745	745	745	746	745
	3-Nov	745	745	744	744	744	745	745	744	744	744	745	745	745	746	747	747	748	748	748	748	748	749	749	749	749	746
	4-Nov	750	750	750	750	750	750	750	751	751	751	750	749	749	749	749	748	748	749	749	749	749	749	749	748	751	750
	5-Nov	749	748	748	747	747	747	747	747	746	746	747	747	746	746	746	746	746	746	747	747	747	747	747	747	749	747
	6-Nov	747	746	746	746	746	746	746	746	746	746	746	745	744	743	743	744	744	744	744	744	744	744	744	744	747	745
	7-Nov	744	744	744	744	744	744	744	745	745	745	746	747	747	747	747	748	748	748	749	749	749	750	750	750	750	747
	8-Nov	750	750	750	750	750	750	750	751	751	750	750	749	748	747	747	747	747	747	747	747	747	747	747	747	751	749
	9-Nov	747	747	747	747	747	747	747	746	746	746	745	744	744	743	743	743	743	744	744	744	745	745	745	745	747	745
	10-Nov	745	745	745	745	745	745	746	746	746	746	745	744	744	743	743	744	744	744	744	744	744	744	744	744	746	745
	11-Nov	744	744	744	743	743	743	743	744	744	743	743	742	741	741	740	741	743	743	744	745	745	745	745	747	743	743
	12-Nov	748	748	749	750	750	751	752	753	753	754	754	754	753	753	752	753	753	754	754	755	755	756	756	756	756	753
	13-Nov	756	756	757	757	757	757	757	758	758	758	758	757	757	756	755	755	755	755	756	756	756	756	756	756	758	756
	14-Nov	756	756	756	756	756	756	756	756	757	757	756	756	755	754	754	754	753	753	754	754	754	754	754	754	757	755
	15-Nov	754	754	754	754	754	754	754	754	754	754	754	753	754	753	752	753	753	753	753	754	754	754	754	754	755	754
	16-Nov	754	754	755	755	755	755	755	755	756	756	756	756	755	755	754	754	755	755	755	755	756	756	756	756	755	755
	17-Nov	756	756	756	756	757	757	757	757	757	757	757	756	756	755	755	755	755	756	756	756	756	756	756	756	757	756
	18-Nov	756	756	756	756	756	757	757	757	757	757	757	756	756	755	755	754	754	754	754	755	755	755	755	755	755	753
	19-Nov	755	755	755	755	755	755	755	755	754	754	753	753	753	752	753	753	753	753	753	753	753	753	753	753	752	753
	20-Nov	752	752	752	752	752	752	752	752	752	751	751	751	751	750	750	749	749	749	749	749	749	748	748	748	752	750
	21-Nov	748	748	748	748	747	747	747	748	748	748	747	747	746	746	746	747	747	748	748	749	749	749	750	750	748	748
	22-Nov	750	750	750	750	751	751	751	751	751	752	752	752	751	750	749	749	749	749	749	749	749	749	749	749	752	750
	23-Nov	748	749	748	748	748	748	748	747	747	747	747	746	745	745	744	744	744	744	745	745	745	746	747	749	746	746
	24-Nov	747	748	749	749	749	750	750	750	750	750	751	752	752	751	751	752	752	752	753	753	754	754	754	754	754	751
	25-Nov	754	754	754	753	753	753	753	754	754	754	754	753	753	752	751	750	749	749	748	748	747	747	746	746	746	751
	26-Nov	746	746	745	745	744	744	744	744	744	745	744	744	743	743	742	742	742	742	743	744	744	745	745	746	746	744
	27-Nov	746	746	746	746	746	747	747	748	748	748	749	748	748	747	747	746	746	746	746	746	746	746	746	746	749	749
	28-Nov	754	754	754	754	754	754	755	755	756	756	756	756	755	754	754	753	753	753	753	753	753	753	753	753	756	754
	29-Nov	752	752	752	752	752	752	752	752	752	751	751	750	749	748	748	748	748	748	748	748	748	748	748	748	752	750
	30-Nov	749	749	749	748	748	748	748	748	748	748	748	748	748	748	747	746	746	747	747	748	748	748	748	749	748	748

 BARR	Maximum Hour//Monthly Average	758
	Total Hours In Month	720
	Valid Hours//Percent Data Captured	100.0%

Meteorological Report
The Doe Run Company
Precipitation

Site Name: Rivermines

Average Interval: 01 Hour
Sampling Frequency: 01 Second

2012	Hour	24 Hour																									
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max
1-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5-Nov	0.00	0.00	0.00	0.00	0.00	0.01	0.07	0.08	0.03	0.02	0.00	0.00	0.04	0.04	0.05	0.03	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.08	0.41
6-Nov	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.03	
7-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.32	0.28	0.32	0.15	0.11	0.12	0.08	0.12	0.02	0.32	1.54
12-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
15-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
16-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
19-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
21-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
22-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.09	0.00	0.00	0.23	0.32	
23-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
24-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
26-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
27-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
29-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
30-Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
																									Maximum Hour//Monthly Total	0.32	
																									Total Hours In Month	720	
																									Valid Hours//Percent Data Captured	720	
																									100.0%		